REMARKS

This is in response to the Office Action that was mailed on September 2, 2005. Claims 1, 3, 5, 13, 14, and 18 are amended to focus more specifically on the present invention. New claims 24-26 in accordance with the disclosure to recite specified embodiments of the invention. No new matter is introduced. Claims 1-26 are pending in the application.

THE INVENTION. The present invention provides ester compounds capable of forming polymers which are effectively acid-decomposable and which can control the diffusion of the acid that is generated upon exposure. The present invention also provides polymers which are blended as base resins to formulate resist compositions having higher sensitivity and resolution than conventional resist compositions as well as minimized line density dependency. The present invention further provides resist compositions and patterning processes using the resist compositions.

THE REFERENCES. Each of the Jung et al., Nio, Nishi, Hasegawa '071, Chiba, and Hasegawa '178 references upon which the Examiner relies in the outstanding Office Action has a publication date more than one year prior to September 29, 2003, the U.S. filing date of the present application. Accordingly, Applicants distinguish the present invention over those references as discussed below.

Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by the Jung *et al.* abstract. Office Action, page 2. The furandiyl group is deleted from the definition of A^2 and the definition of R^1 and R^2 is limited to recite that those two variables form an aliphatic hydrocarbon

ring with the carbon atom to which they are bonded. Accordingly, the invention of claim 1 in its present form is not anticipated by the Jung *et al.* reference.

Claims 1, 4, 13, 14, 16, and 17 were rejected under 35 U.S.C. §102(b) as being anticipated by JP 2002-156760 and its English abstract (Nio). Office Action, pages 2-3. Claims 1, 4, and 13-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nio. Office Action, pages 3-5. The furandiyl group is deleted from the definition of A^2 and the definition of R^1 and R^2 is limited to recite that those two variables form an aliphatic hydrocarbon ring with the carbon atom to which they are bonded. Accordingly, the inventions of claims 1, 4, 13, 14, 16, and 17 in their present form are neither anticipated nor rendered obvious by the Nio reference.

Claims 1 and 3-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over US 2002/0132182 A1 (Nishi) in view of US 6,774,258 B2 (Hasegawa '258). Office Action, pages 5-6. In formula (1-1) of Nishi, as defined in paragraph [0018] the variable "W" is defined as being a straight-chain or branched divalent hydrocarbon radical having 2 to 10 carbon atoms, which may have one or more ester linkages in its structure and may further be substituted by one or more other atomic groups containing a heteroatom. In the present invention, the linkage that corresponds to the variable "W" of Nishi is a linkage of the formula $-C(O)OCHR^1R^2-$ in which R^1 and R^2 together form an aliphatic hydrocarbon ring with the carbon atom to which they are bonded. This sort of linkage is neither taught nor suggested by Nishi. Hasegawa '258 fails to teach or suggest the linkage of the present invention in the context of an ester containing a tetrahydrofuranyl group or an oxanorbornanediyl group. Accordingly, the present invention is not motivated by Hasegawa '258,

and Applicants respectfully submit that the Examiner has not stated a *prima facie* case of obviousness with respect to the claims in their present form.

Nevertheless, Applicants point out that the resist compositions of the present invention have properties that are unexpectedly superior to properties of the prior art compositions. Specifically, As shown in Table 3 of the primary reference, Nishi, resolution of the Nishi compositions is about 0.2 μm. In contrast, as is apparent form Table 1 in the present specification, resist compositions containing polymer of this invention have a significantly better resolution, 0.11 μm. This unexpected advantage of the present invention is not suggested by the combination of Hasegawa '258 with Nishi.

Claims 1, 4, and 13-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over US 2001/0044071 A1 (Hasegawa '071) in view of US 6,280,900 B1 (Chiba). Office Action, pages 6-8. Hasegawa '071 fails to teach or suggest relevant compounds with a tetrahydrofuranyl group or an oxanorbornanediyl group. Chiba also fails to teach or suggest relevant compounds with a tetrahydrofuranyl group or an oxanorbornanediyl group. It is noted that tetrahydrofuranyl groups and oxanorbornanediyl groups each contains a polar oxygen atom, which provides them with a chemistry that is significantly different from that of the non-polar cyclic groups of the references. It is also pointed out that the excellent resolution (0.11 μm) of resist compositions made in accordance with the present invention is significantly better than the resolutions of compositions shown in the Examples of the references. Accordingly, it is manifest that claims 1, 4, and 13-23 in their present form are distinguished from the technology of the Hasegawa '071 and Chiba references.

Claims 1, 4-8, and 18-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over US 2002/0004178 A1 (Hasegawa '178) in view of Chiba. Office Action, pages 8-9. Hasegawa '178 fails to teach or suggest relevant compounds with a tetrahydrofuranyl group or an oxanorbornanediyl group. Chiba also fails to teach or suggest relevant compounds with a tetrahydrofuranyl group or an oxanorbornanediyl group. As pointed out above, tetrahydrofuranyl groups and oxanorbornanediyl groups each contains a polar oxygen atom, which provides them with a chemistry that is significantly different from that of the non-polar cyclic groups of the references. It was also pointed out above that the excellent resolution (0.11 μm) of resist compositions made in accordance with the present invention is significantly better than the resolutions of compositions shown in the Examples of the references. Accordingly, it is manifest that claims 1, 4-8, and 18-23 in their present form are distinguished from the technology of the Hasegawa '178 and Chiba references.

Claims 1, 2, 4, and 9-23 in the present application were ***provisionally*** rejected on the ground of obviousness-type double patenting over claims 1, 4, 9, and 10 of copending application Serial No. 10/936,753. Inasmuch as the final form of the claims has not yet been approved by the PTO for either one of these two applications, it is respectfully requested that further consideration of this provisional rejection be deferred. Applicants also respectfully request that – in accordance with MPEP 804(I.)(B.) – the Examiner withdraw the double patenting rejection in this application and pass this application (as amended hereinabove) to Issue.

Conclusion

The Examiner is respectfully requested to withdraw all rejections of record and to pass this application to Issue.

If the Examiner has any questions or comments, please contact Richard Gallagher, Reg. No. 28,781, at the offices of Birch, Stewart, Kolasch & Birch, LLP at the number listed below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 02-2448, under Order No. 0171-1023P from which the undersigned is authorized to draw.

Dated:

Respectfully submitted,

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